

POLARWEB - BUILDING AND DEVELOPING OF A WEB SERVICE

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ABSTRACT: This paper is about the Polar Web, which is a guide to Internet resources dealing with the lands and waters surrounding the North Pole and the South Pole, and with other cold regions of the Earth. All subjects' disciplines are covered. The Polar Web is a collaborative project of the Polar Libraries Colloquy. It is managed by the Arctic Centre at the University of Lapland (AC), Rovaniemi, Finland. There seemed to be a need for this kind of service in the Internet and thus this project was started in 1996 at the AC together with William Mills from the Scott Polar Research Institute. Now the service has been in use for the science community about 18 months but the work is not over yet, on the contrary it looks like it has just started. I will deal with the problems of managing and developing the PolarWeb, also take a look at the new web-standards like XML - how them can be helpful or will they make PolarWeb unneeded in the future?

KEYWORDS: world wide web, polar areas, information services

Building of the PolarWeb

The idea for this project was introduced in the 1994 PLC meeting. In 1996 a working group was founded and it was decided that the project will be started at the Arctic Centre, University of Lapland. The work started in 1996 when AC hired a planner, Miss Mari Ekman, for one year to do the work. The Structure for the system was done by Mari Ekman and William Mills from the Scott Polar Research Institute Library. In the homepage there are three main categories:

- A. General
- B. Geographical Regions and
- C. Special Subjects

The A section has six sub-headings:

1. Resources (Libraries and bibliographic databases, data centers and data directories, museums)
2. Organizations (International and national research organizations)
3. Research Projects (Project directories and links to other research projects)
4. Contacts and Communications (Experts, mailing lists, etc.)
5. News (forthcoming meetings, new publications, etc. Link to the Congresses database that is maintained by AC)
6. Electronic Newspapers and Publications

In the sections B and C the links are sorted by geographical region (B) or by subject (C). One site can have links from both B and C-section. Linking sites to the right category was quite difficult because many institutes do multidisciplinary research.

At the bottom of the page there is a possibility to do searches from the local web site at the University of Lapland (PolarWeb pages plus Arctic Centre's web pages). The search engine used is WebGlimpse. It's possible to search other directories indexed with WebGlimpse if the index file can be copied to our local server.

After the structure was created, the search began for the relevant links. It was done by doing keyword searches with common search engines, like AltaVista and Yahoo.

Graphics and layout

The layout is very simple and clear, pictures and graphics are used only in the Polar and Cold Regions Libraries and Archives -pages where there are small maps of the Antarctic and Arctic. There was a background picture for a while (it can be seen at the Organizations page - A 2.) but since we got feedback that it's slowing the downloading it was removed.

Technical problems encountered

In the beginning the main problems we had were with the server of the University of Lapland where the pages are hosted. Due to several reasons the server was way too slow and was down far too many times. Because we are dependent on the university's computer center and it looked like we are not very high on their priority list, it took almost two years to have a simple search engine for the PolarWeb.

THE PRESENT STATUS

Visitors

Now that the pages have been up for about two years people seem to have found the pages. This year there have been 1,000 – 1,600 visits / month, see appendix for more

detailed statistics. Of course that's very little compared to many sites but since there are no sexy subjects in the pages, it can be considered as a good start.

Updating and maintaining

One of the biggest jobs is to keep the links active and find new relevant sites. Development in future web-technology will hopefully solve these problems but before that you'll have to go through the links and remove dead ones or replace them with new addresses - if you can find them. We have used trainees from local schools to find new sites and check the existing links.

When the web creates a problem (like dead links), it often gives you tools to cope with it, like for example NetMind's URL-Minder. This service keeps track of Web pages and other resources on the World Wide Web. It sends a notification via email whenever registered resources change (<http://www.netmind.com/html/url-minder.html>).

Suggestions for new links are coming from institutes and individual persons who would like to have their pages linked. Our staff informs us when they find interesting sites. One way to find links to arctic research and ongoing research projects is to join open mailing lists, like ArcticInfo which is administered by the Arctic Research Consortium of the United States, ARCUS (<http://www.arcus.org/>). The disadvantage is that your mailbox can be loaded sometimes.

POLAR AND COLD REGIONS LIBRARIES AND ARCHIVES

The web version of the Polar and Cold Regions Libraries and Archives is one essential part of the PolarWeb. It was edited into web format by Eric Tull from the University of Calgary Library. In the beginning the editing was done at the University of Calgary Library. The updated files were automatically sent to Rovaniemi by email and then were manually transferred into our web site. Eventually problems arose when we did some changes here; it happened that we had different versions of the database in our sites. So we agreed that all the editing is done here and gradually we were able to migrate all the pages from the University of Calgary Library to the Arctic Centre.

The information for this directory is taken from two sources:

1. Polar and Cold Regions Library Resources: a Directory (3rd edition). Compiled and edited by Martha Andrews, Ann Brennan, and Liisa Kurppa
2. Keyguide to Information Sources on the Polar and Cold Regions. Written by two staff members of the Scott Polar Research Institute - William Mills and Peter Speak

It's possible to add your information to the directory by filling the form on the web page or by sending email to me: avitikka@urova.fi

FUTURE DEVELOPMENTS IN THE WEB TECHNOLOGY AND POLARWEB

There is interesting development going on in the Web technology, which in the future can help a lot in managing PolarWeb. The two main problems now are to find the relevant sites, among the millions of web pages, and to keep the links operational - it's very frustrating to go through a list of links which are giving as a result the most popular page ever:

File Not Found

The requested URL /hello.htm was not found on this server.

I deal shortly with two systems that in the future can make the maintaining easier: XML and Dublin Core.

XML

A lot is expected from the XML (Extensible Markup Language) extension to the HTML language. HTML is a format that describes how a Web page should look, and does not represent data. The use of XML will improve Web-browsing applications for viewing, filtering, and manipulating information on the Internet. It should also make electric trade easier.

There are three main elements in XML:

- DTD (Document Type Definition) defines the logical structure of the XML-document; the "grammar" used and allowed tags in the document.
- XSL (Extensible Style Language) defines how the documents should look.
- XLL (Extensible Link Language) (Extensible Link Language) is the most interesting part for the PolarWeb. It is still under development. With XLL, for example, linking could be multidirectional, and links could exist at an object level rather than just at a page level. With XLL it is possible to create indirect links which are based on "link warehouses" where the changed URL's are updated. That would be a great relief, because then the work done now to check the links would not be needed anymore. More reading about XML can be found from addresses: <http://www.w3.org/XML/> and <http://www.microsoft.com/xml>.

Dublin Core

The Dublin Core is a 15-element metadata element set intended to facilitate discovery of electronic resources. The idea is that each html-document has metadata that tells the search engines about their content, for example like this:

date.current: 19980825
title: PolarWeb homepage
creator.name: Vitikka, Arto
creator.email: arto.vitikka@urova.fi
creator.affiliation: Arctic Centre, University of Lapland
creator.postal: P.O. Box 122, 96101 Rovaniemi
subject.keyword: arctic, antarctic, polar areas, libraries, information service
description: Guide to Internet resources dealing with the lands and waters surrounding the North Pole and the South Pole, and with other cold regions of the Earth. All subjects disciplines are covered from the physical sciences and life sciences, through the social sciences and the native peoples, to the engineering/technology disciplines.
publisher: Arctic Centre and Polar Libraries Colloquy
date.creation: 19960410
format: text/html
identifier. url: <http://www.urova.fi/home/arktinen/polarweb>
language: ENG
coverage: Polar areas

It's essential that the major search engines start to support Dublin Core standard, which they don't do so far. But there are projects, which have engines that use the standard, like Nordic Web Index (<http://nwi.ub2.lu.se/>). More information about Dublin Core from address: purl.oclc.org/metadata/dublin_core and about Nordic Metadata project from <http://linnea.helsinki.fi/meta/>

Map interface

One future development could be to build a geographical interface to PolarWeb using clickable maps or Java based applications to access the resources in Polar Regions. One example of this kind of interface in the Internet is BALTICSEAWEB - An information system about the Baltic Sea environment (www.baltic.vtt.fi). In the figure 1 there is a picture of the page. From the map one can select the area of interest by clicking the check box and after that do keyword or free text search to the database.

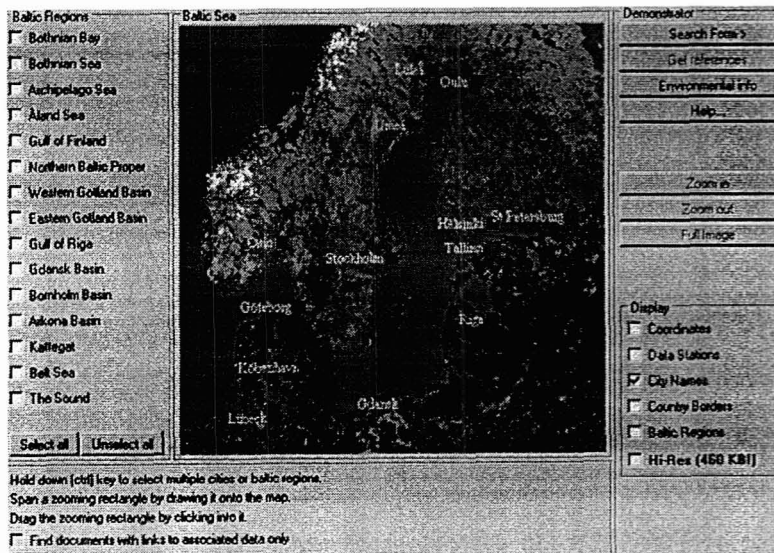


Figure 1. Geographic interface in the Baltic Sea Web, <http://www.baltic.vtt.fi>.

References

- XML; <http://www.w3.org/XML/>
 XML White paper; <http://www.microsoft.com/xml>
 Net-Minder; <http://www.netmind.com/html/url-minder.html>
<http://www.arcus.org/>
 Nordic Web Index; <http://nwi.ub2.lu.se/>
 Dublin Core; http://purl.oclc.org/metadata/dublin_core
 Nordic Metadata project; <http://linnea.helsinki.fi/meta/>
 Baltic Sea Web; <http://www.baltic.vtt.fi>

Appendix

Number of requests / page / month (pages with 50 or more requests/month)

March 1998

Requests	Page
1969	Homepage
349	Geographical Regions
344	Polar And Cold Regions Libraries And Archives
295	Resources
220	Research Projects
206	Special Subjects
145	Electronic Newspapers and Publications
138	List of libraries in Denmark
134	Organizations
112	Contacts and Communications
95	List of libraries in Canada
85	Polar Libraries Directory
85	Royal Geographical Society
84	Special Subjects, Native Peoples
74	Polar Libraries Colloquy
69	Special Subjects, Biological Sciences
67	Biblioteca Nacional De Chile
65	Public Records Office UK
64	Canada Dept. of Indian Affairs and Northern Development Library
63	Special Subjects, Earth Sciences
59	List of libraries in UK
59	Scottish Record Office
58	List of libraries in Finland
57	National Climatic Data Center / NOAA
56	Metropolitan Toronto Reference Library Special Collections
55	List of libraries in the United States
54	Hudson's Bay Company Archives. Provincial Archives of Manitoba
54	British Library
54	Royal Geographical Society. Library
52	List of libraries in Chile
51	Special Subjects, Other Sciences

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Requests	Page
1250	Homepage
257	Polar And Cold Regions Libraries And Archives
197	Resources
173	Geographical Regions
118	Electronic Newspapers and Publications
116	Special Subjects
111	National Climatic Data Center / NOAA
103	Organizations
102	Research Projects
87	News
87	List of libraries in the United States
84	Biblioteca Nacional De Chile
82	Special Subjects, Native Peoples
79	Public Records Office UK
77	List of libraries in Canada
75	Contacts and Communications
72	Polar Libraries Colloquy
69	List of libraries in UK
53	Royal Geographical Society. Library

Comments from the audience: We use this in teaching how to find information from the Web.

The layout of the PolarWeb, should we do something for it? If you know sites that should be added to the service, please contact by email.